

either near to the glans, or in the middle, or quite at the root of the passage in the perineum; and hence the varieties of the malformation which have been described by authors.—*Med. Chirurg. Rev. from Gazette des Hôpitaux.*

2. *On the varieties of the obturator artery, and the relations of these to the femoral ring.* It is highly probable that there is greater risk of wounding the obturator artery during the operation for strangulated femoral hernia, than is usually supposed. The following remarks, therefore, by Dr. John Reid, on the varieties in the origin and course of this artery, are deserving of attention.

Mr. Guthrie states, in his essay on femoral and inguinal hernia, when speaking of the danger of wounding the obturator artery in operations for strangulated femoral hernia, "that he has been made aware of more than one accident of this nature having occurred in operations performed by some of the best anatomists and surgeons in London, and the patients subsequently bled at intervals, until they died from hæmorrhage." Robert* mentions, that the celebrated Mursinna, in operating for strangulated femoral hernia, in a case where the obturator artery had surrounded the neck of the sac, wounded the external coat of the artery, and that the patient died eight days after, from hæmorrhage arising from a rupture of the injured artery.

In 1831, I witnessed a somewhat similar case in the practice of Dupuytren at the Hotel Dieu. The patient was a female about 60 years of age, who was brought into the hospital with well marked symptoms of strangulated femoral hernia. All the urgent symptoms ceased after the operation, and she seemed to be going on well for a fortnight, when she was seized with severe diarrhœa, which soon carried her off. On dissection, a broad sheet of effused blood was observed through the *peritoneum*, evidently placed between that membrane and the *fascia transversalis* of Sir A. Cooper, extending from the lower part of the *pelvis*, up nearly to the *umbilicus*. This was found to have taken place from the obturator artery, which in this case had arisen from the external iliac by a trunk common to it with the epigastric, and had nearly surrounded the neck of the sac, and which, during the operation, had been completely cut across. Dupuytren remarked, that the blood which escaped externally during the operation, was greater than usual, but this soon ceased. Had this woman not died from the effects of the diarrhœa, it would never have been discovered that the obturator artery had been wounded. The extent of the hæmorrhage was in all probability diminished, by the artery having been completely cut across.

The most common origin of the obturator artery is from the internal iliac or some of its branches; but in a great number of cases it is found to arise either directly, or much more commonly indirectly from the external iliac, by a trunk common to it with the epigastric. When it arises from the internal iliac, it is evident that it can in no way be implicated in the operation for femoral hernia, in whatever manner it may be performed. Even when it arises from the external iliac, it is but very rarely endangered in the ordinary methods of performing this operation, as it generally proceeds downwards and inwards, first passing along the outer or iliac side of the femoral ring; and then along part of its posterior margin, to reach the upper portion of the obturator *foramen*. In the rarer cases, which seem to be principally those in which the common trunk of the obturator and epigastric is longer than usual, the obturator takes a more circuitous course, passing along the upper margin of the femoral ring, and then along its inner or pubic margin. It must be evident that when a femoral hernia descends, the relative position of the artery to the neck of the sac, in these two cases, is very different, and, in a practical point of view, involves very important considerations.

We have stated that the most common, or what is considered the normal origin of this artery, is from the internal iliac, or one of its branches. The origin next in frequency is by a common trunk with the epigastric from the external iliac. More rarely it springs directly from the external iliac, and still more rarely from the femoral. Though the artery may thus arise from points placed at a considerable distance from each other, it invariably makes its way out of the *pelvis* by the same opening, viz. the upper part of the *obturator foramen*. When it is a branch

* Journal des Progres des Sciences Medicales, Tome viii. p. 193.

of the femoral it mounts upwards along that artery, passes below Poupart's ligament, and places itself in the same position as if it had arisen within the *abdomen*.

Cloquet* examined 250 subjects; 125 females, and 125 males, for the purpose of ascertaining the relative frequency of the origin of the obturator, from the hypogastric, external iliac, and epigastric. In these the obturator arose from the hypogastric on both sides in 160; from the epigastric on both sides in 56; from the epigastric on one side, and the hypogastric on the other, in 28; from the external iliac in 6. Including both sides of the body, thus increasing the number of arteries examined to 500, and taking all the obturator arteries which arose from the hypogastric arteries, and all those which arose from epigastric arteries, or directly from the external iliac, he found that the obturator arose from the hypogastric in 348; from the epigastric or external iliac in 152. According to these results, the frequency of the origin of the obturator artery from the hypogastric are to those from the epigastric and external iliac as 3 to 1. The obturator was found to arise rather more frequently from the hypogastric in males than in females. Monro believes the relative proportion between the origin of the obturator artery from the internal iliac and its branches, and from the epigastric and external iliac, to be as 20 to 1. Velpeau† states that his observations, drawn from the examination of nearly a thousand cases, led him to coincide in Monro's opinion. Hesselbach‡ thinks that the origin of the obturator from the external iliac and epigastric is not very common, and strangely asserts, that it rarely occurs, except in females. Manec§ states the proportion to be 1 in 6; Scarpa and Lawrence as 1 in 15. According to other researches¶ the obturator was found to arise in common with the epigastric in 12 out of 63 subjects affected with crural hernia, and in all passed behind the neck of the sac. Meckell|| is of opinion that the obturator arises nearly as frequently from the epigastric and external iliac, as from the internal iliac and its branches. My own dissections have furnished me with results approaching very nearly to those of Cloquet. Of course the only conclusion that can be drawn from these discordant statements is, that the obturator arises very frequently from the external iliac, in common with the epigastric. The epigastric has been observed by Monro, Hesselbach, Lauth, and Velpeau, to arise from the obturator or some of the branches of the internal iliac, so that it might in some cases, such as in that detailed by Hesselbach, be carried to the inner side of the sac in femoral hernia. Some, as Cruveilhier,¶ maintain, that these descriptions of the origin of the epigastric from the obturator ought to be considered as nothing more than the branch which generally passes between those arteries increased beyond the usual size; but Velpeau** seems quite convinced of the accuracy of one at least of these descriptions from actual observation.

Dr. Barclay was the first to dissect and prepare a case of femoral hernia, in which the obturator artery passed along the pubic side of the neck of the sac. This preparation, unique at the time, was delineated in Sir A. Cooper's work on femoral hernia, and is now in the Barclayan part of the Museum of the Royal College of Surgeons of Edinburgh. Mr. Wardrop shortly after this described a similar case, also referred to by Sir A. Cooper in the same work. Dr. Monro has seen the artery passing on the pubic side of the neck of the sac three times. Dr. Knox is in possession of a very beautiful preparation of this kind, in which the artery was firmly tied to the outer edge of Gimbernat's ligament.†† Similar cases in which the obturator artery took that course have been seen by Cloquet and Dr. Thomson. Brechet‡‡ also refers to one. I have no doubt, indeed I know, that similar cases have been seen by others; but the extreme rarity of the occurrence having passed over, these are not now made public.

Allen Burns relates a case in which there were two femoral hernia on the same side; one protruding into the femoral ring, the other into the sheath of the vein.

* *Recherches Anatomiques sur les Hernies de l'Abdomen*, p. 72.

† *Traite Complet d'Anatomie Chirurgicale*, 2d Edit.

‡ *Origine, &c. des Arter. Epig. et Obturat.*

§ *La Medecine Operatoire par Sabatier*, p. 609. Tome iii. E. 1830.

¶ *Manuel d'Anatomie Descriptive, Generale, &c. Tome ii.*

** *Anatomie Descriptive, Tome iii.*

†† *Oper. cit.*

‡‡ This preparation is delineated and described in a very excellent probationary essay on the Obturator Artery, by Dr. H. B. Macfarlane.

§§ These sur la Hernie Femorale, p. 133.

If the obturator artery had arisen in this case from the epigastric, it would in all probability have surrounded the greater part of the neck of the sac of the smaller hernia, protruding into the sheath of the vein.* Mr. Lawrence infers that the obturator artery may surround the neck of the sac, so as to become endangered in 1 of 80 cases of femoral hernia. As this calculation, however, must be formed from imperfect data, we can only regard it as an approximation to the truth.

When the obturator arises in common with the epigastric, we generally observe a small branch running in the more usual course of the obturator, and *vice versa*. Meckel supposes that in the fœtus, the obturator is always formed by two branches, one from the internal iliac, and one from the epigastric or external iliac; that these are at first of equal calibre, but, as the growth proceeds, one of them becomes arrested in its development, and never proceeds beyond the fetal state, while the other enlarges in proportion to the increasing size of the parts which it supplies.

The epigastric generally sends two small branches over the posterior surface of Gimbernat's ligament, one of these ramifying upon the posterior surface of the pubis, the other proceeding downwards to the upper part of the obturator foramen, to connect itself with the obturator artery. This last branch, if we admit Meckel's views to be correct, must be regarded as forming part of the obturator artery in the fœtus, and which often becomes enlarged, while the other branch remains of the fetal size; so that what is generally considered as the abnormal origin of the obturator artery is only the enlargement of a normal branch. In a preparation made by Mr. Liston, and described and figured by Dr. Monro, this branch passing between the epigastric and obturator is of unusual size. This resembles cases alluded to by Cruveilhier, where the branches from the epigastric and internal iliac forming the obturator were of equal calibre.

The obturator vein often passes up to join itself to the epigastric vein. In this course it may surround the neck of the sac. Allen Burns has seen an instance of this kind. Michelet found the internal circumflex artery in one case arising in common with the epigastric, and he supposed that if a femoral hernia had descended, it might have been pushed to the pubic side of the neck of the sac. I had an opportunity of dissecting a similar variety two winters ago; but in that case the artery would, in all probability, have lain on the iliac side of the neck of the sac. In one subject last winter I found the converse of this variety; the epigastric arose from the internal circumflex an inch and a quarter below Poupart's ligament. The artery in this case would also in all probability have been placed on the outer side of the sac, had a femoral hernia descended.

Besides the constant danger of cutting directly outwards from the position of the common femoral vein, of carrying the knife upwards and outwards to any great extent from the proximity of the origin of the epigastric artery, of cutting directly upwards, for much more than two lines in the male from the presence of the spermatic cord, we find that there are other blood-vessels, deviating from their usual course, which may occasionally present themselves to the cutting edge of the knife, in whatever manner the operation may be performed. Though no surgeon in this country would, in consequence of this, be inclined to adopt the method of dilating the stricture, yet it must deeply impress upon his mind the necessity of not extending his incisions for enlarging the stricture, beyond what is absolutely necessary for returning the contents of the hernia without violence.†

If the obturator should happen to be divided during the operation, are we to stand idly by, and not attempt to secure the cut extremities of the artery? Mr.

* The protrusion of a hernia into the proper sheath of the vessels, by which I mean the tendinous septa passing backwards from the posterior surface of Poupart's ligament, and upper part of the iliac portion of the *fascia lata* between the artery and vein, and also on the pubic side of the vein, to the pubic portion of the *fascia lata*, must be an exceedingly rare occurrence, since this is not only prevented by the close manner in which the sheath envelopes the vessels, but more particularly by the reflection of the *fascia transversalis* from Poupart's ligament upon the anterior surface of the vessels. If, however, we with some anatomists describe the *fascia cribriformis* as the anterior part of the sheath of the vessels, and the pubic portion of the *fascia lata* which lies behind the vessels as the posterior part of their sheath, then every femoral hernia lies in the sheath of the vessels.

† In some of the cases in which the obturator surrounds the neck of the sac, the incisions for enlarging the stricture may probably be carried for a line or two without endangering the artery.

Guthrie has very properly strongly protested against such inactivity, and lays down the following directions for securing the artery. "In the male a transverse incision should be made in the line of Poupart's ligament, the tendon of the external oblique muscle cut through, and the spermatic cord exposed; this is to be drawn upwards, and kept in that situation by a bent probe. Poupart's ligament is then to be cut through until the first incision for dividing the stricture is met by that just made. The blood will now easily lead to the artery, which must be secured by a ligature, and to render this easy of execution, sufficient space and a blunt knife only can be wanted in addition to the forceps and ligature. In the female the operation is very simple, as the round ligament requires little attention being paid to it."—*Edinburgh Med. and Surg. Journ.* July, 1836.

PHYSIOLOGY.

3. *Temporary loss of the memory of words, after an injury of the head.*—An interesting example of the loss of language from injury to the brain is related by Dr. Inglis in the *Edinburgh Phrenological Journal*. The subject of this case was a woman *ret.* 33, who was shot by a sheriff's officer on the 24th December, 1835.—The ball entered the cranium at the external orbital angle of the frontal bone. That night she had an epileptic fit, and she remained insensible till the 26th, on which day sensibility returned.

On the 29th she was seen by Dr. Inglis and Mr. McKeur, when she answered questions correctly, and her memory was quite unimpaired. She complained of some pain of the back part of her head, but especially of a dull, heavy, constant pain in the region of the wound. This was increased by some degree of vertigo, which followed from assuming the erect posture. A probe was introduced into the wound, and, after penetrating about an inch and a quarter, was stopped by a splinter of bone. On passing the probe a little to the right, or towards the median line, the bullet was distinctly felt, having penetrated both tables of the bone, imbedded deep in the rugged edge of the internal one. A sufficient incision being made, Dr. Inglis succeeded, by the application of some force, in extracting the bullet. It was flattened on one side and rugged, having the impression of the bone into which it had been impelled. Several splinters were removed, and also the one mentioned above of greater size, which was pressing upon a portion of the anterior lobe of the brain. The orbital plate of the frontal bone was also considerably injured. The wound was dressed with adhesive straps, and lint, wetted with cold water, kept applied. The pulse was 72. A purgative was prescribed.

On the 30th there was violent pain in the back of the head—pulse 80—bowels open. On the 31st, had slept little, and still complained of the pain in back part of the head. Appears drowsy, and answers questions incoherently. The wound discharges healthy pus. No stool since yesterday. Tongue white, but moist. On the 1st of January, Dr. I. found that she had been up and eating animal food—pulse 100—pyrexia—some degree of stupor, and talked incoherently when roused. On the 2nd she was insensible unless roused, when she knew every body, and understood what was said. She seemed to have lost the memory of words, and could not express her wants. Pulse 68—pupils natural.

She continued in nearly the same state for the next two days, when, after excitement she became more comatose. Pulse 60. On the 6th, much discharge took place from the wound, and a small piece of bone came away. After this, she seems to have improved, for on the 9th, the power of speech was returning, and on the 11th she could talk slowly and without hesitation. The wound was then greatly cicatrized, and the pulse had fallen to 48.

"All the symptoms have gone on improving down to the present date (Jan. 18.) Still, however, she forgets some words; and, when talking about any thing, she repeats the same words several times before she can recollect others to express her ideas in succession; and often stops short in the middle of a sentence, telling the nurse to finish it for her."

In a postscript, we are informed that the memory of words is quite restored.

It will be observed that, in this case, the loss of the recollection of words did not